



SCIENTIFIC COUNCIL MEETING – OCTOBER/NOVEMBER 2005

The Spanish Shrimp Fishery on Flemish Cap (Division 3M) and Division 3L in 2004

by

J. M. Casas and J. L. del Río

Instituto Español de Oceanografía, P.O. Box 1552, Vigo, Spain
e-mail: mikel.casas@vi.ieo.es

Abstract

This paper shows data about catch, effort, catch per unit effort (CPUE) and size distributions of shrimp (*Pandalus borealis*) for Spanish commercial fishery in NAFO Divisions 3M and 3L in 2004

Material and Methods

The information concerning to the Spanish shrimp fishery was taken from data collected by UE observers on board in the Spanish vessels. Also, two Spanish scientific observers for the Spanish Scientific Program were on board during the fishing period directed to shrimp in two of the vessels, providing information about fishing activity and carrying out biological sampling (length distributions).

Results

In all vessels the gear used was a simple trawl with bar spacing sorting grates. The hauls were mainly carried out in depths between 250 and 500 meters. The 90% of the effort (fishing hours) was carried out between 300 and 500 meters (Fig. 1).

The annual catch according to UE observers was 155 tons and 1 049 tons in NAFO Div. 3L and 3M respectively (Gonzalez *et al.*, 2005). The Table 1 shows the catches and yields of shrimp and discards of the main caught species by quarter, together with the distribution of effort (number of days and hours of activity estimated).

Although the shrimp catch in Div. 3L was much smaller, the yields (kg/h) obtained were much bigger (835 kg/h) than Div. 3M (around 400 kg/h). In Div. 3M the biggest yield occurred in the second quarter with yields of 467 kg/h.

The Table 2 show the length distribution of shrimp by sexes, Divisions and quarters as percentage in the catches sampled during the 2004 year. The length distributions in Div. 3L showed a bigger percentage of females (66%) with two clear modes at 21 and 23 mm. The mode around 23 mm. was also present in length distribution of Div. 3M, however in the mode of 21 mm. was not present, showing two modes at 15 and 19 mm. According to the results presented last year (del Río *et al.*, 2004), these modal lengths would corresponded roughly with the ages 2 and 3 for males (15 and 19 mm, respectively) and ages 4 and 5 for females (21 and 23 mm.).

References

- Casas, J.M., J.L Del Río, and D. González Troncoso. 2004. Northern Shrimp (*Pandalus borealis*) on Flemish Cap Surveys 2003 and 2004. *NAFO SCR Doc. 05/77* 16 pp.
- González, F, J. L. Del Río, A. Vázquez, H. Murua, E. Román, M. Casas, P. Duran and G. Ramilo. 2005. Spanish Research Report for 2004. *NAFO SCS Doc.05/8*

Table 1. Estimated catches (kg), effort and CPUE (kg/h) from UE and Spanish scientific observers by quarter of the Spanish trawl fleet directed to shrimp fishery in NAFO Div. 3L and 3M in 2004.

DIVISION 3L					
SPECIES	1st	2nd	3rd	4th	Total
Northern shrimp ¹	149344		5290		154634
Capelin	4831				4831
Redfish	54				54
American plaice	151				151
Other fishes	1008				1008
Fishing days	12		1		13
Fishing hours	180		5		185
CPUE Shrimp (kg/h)	831		984		835
DIVISION 3M					
SPECIES	1st	2nd	3rd	4th	Total
Northern shrimp	58625	381772	222050	386969	1049416
Redfish	727	4417	32	2164	7340
Greenland halibut				8	8
Red hake			21		21
Skates	80	195		3	278
Wolfish				93	93
Witch flounder				2	2
American plaice	681	1178		6	1865
Other fishes				90	90
Fishing days	10	56	35	64	165
Fishing hours	152	826	580	1083	2641
CPUE Shrimp (kg/h)	385	462	383	357	397

Table 2: Length distribution of Shrimp as percentage from sampled Spanish catches by quarters in NAFO Div. 3M.

Divisions	3M							
	2 nd		3 rd		4 th		total	
Quarters	males	females	males	females	males	females	males	females
Length (mm)	males	females	males	females	males	females	males	females
10	0.01						0.00	
10.5								
11								
11.5								
12								
12.5	0.07				0.05		0.05	
13	0.11		0.16		0.10		0.11	
13.5	0.29		0.31		0.29		0.29	
14	0.24		1.35		0.55		0.65	
14.5	0.24		1.44		0.79		0.84	
15	0.11		6.06		2.24		2.63	
15.5	0.46		1.95		1.92		1.81	
16	0.44		4.65		3.19		3.19	
16.5	0.63		2.48		1.94		1.91	
17	1.02	0.01	3.08		3.00		2.86	0.00
17.5	2.85	0.01	2.32		1.63		1.83	0.00
18	3.71	0.08	7.82		2.73		3.55	0.01
18.5	5.49	0.04	4.49		2.52		3.04	0.00
19	7.24	0.05	5.84	0.16	4.55	0.05	4.95	0.06
19.5	5.04	0.10	3.33	0.00	4.34		4.25	0.01
20	4.31	0.59	2.42	0.66	5.81	0.15	5.20	0.26
20.5	3.67	0.61	2.20	0.97	3.09	0.23	3.01	0.37
21	2.43	1.29	2.36	1.73	5.15	0.54	4.53	0.77
21.5	2.44	1.95	1.44	0.91	2.16	1.63	2.08	1.55
22	2.08	2.34	0.44	2.92	2.05	4.01	1.82	3.72
22.5	1.63	4.49	0.16	3.14	0.51	3.59	0.55	3.60
23	1.34	5.01		1.26	0.90	8.93	0.80	7.50
23.5	0.51	6.37		6.15	0.30	7.34	0.27	7.09
24	0.15	6.78		4.43	0.22	8.17	0.18	7.52
24.5	0.12	7.48		10.36	0.05	3.80	0.05	5.04
25	0.07	5.30		3.52		5.84	0.01	5.46
25.5		3.48		4.33		1.73		2.25
26		2.09		1.88		1.89		1.90
26.5		1.83		1.29		0.77		0.93
27		1.24		1.10		0.51		0.65
27.5		0.88		0.00		0.25		0.26
28		0.56		0.75		0.22		0.33
28.5		0.47		0.16		0.10		0.14
29		0.15				0.13		0.11
29.5		0.09						0.01
30		0.01						
30.5						0.02		0.02
TOTAL	46.71	53.29	54.29	45.71	50.10	49.90	50.45	49.55
Sampled catch (kg)	5559		4040		31631		41230	
No. Samples	10		2		9		21	
No. Sampled	3600		527		2773		6900	

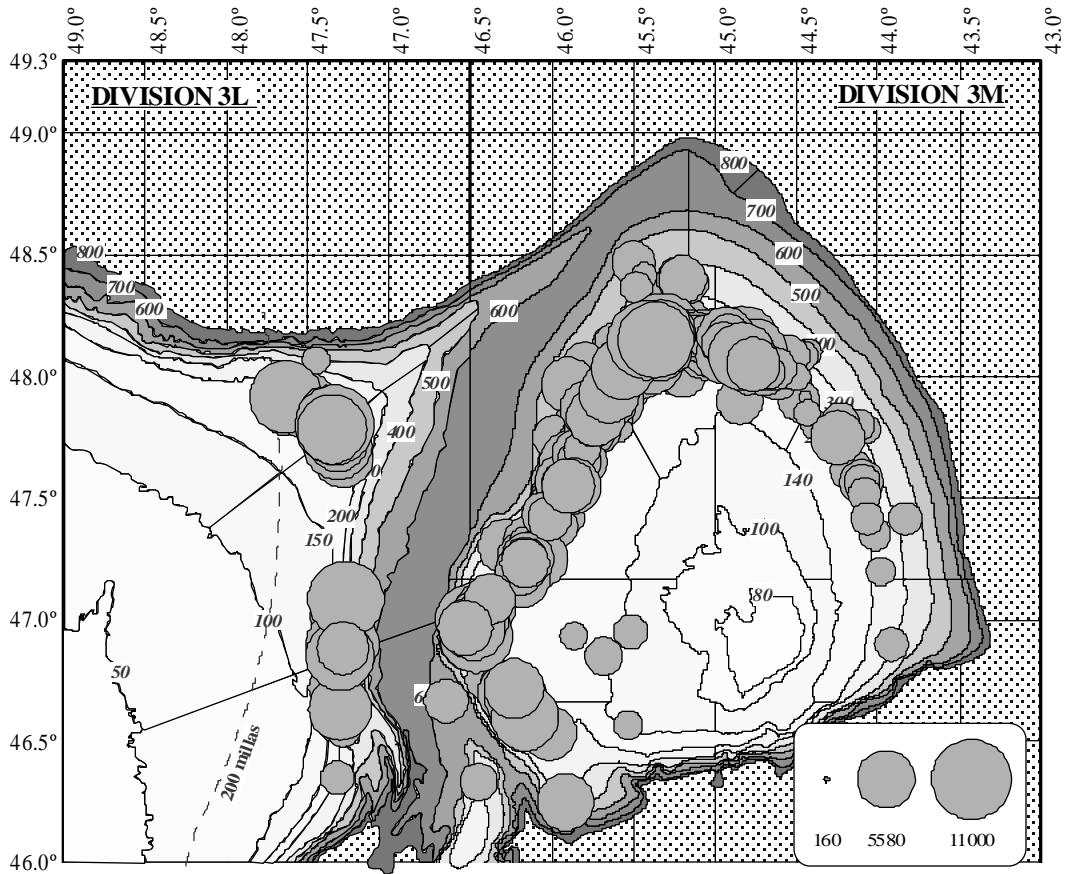


Fig. 1. Geographical location and distribution of Spanish catches (kg) in NAFO Div. 3M and 3L in 2004.

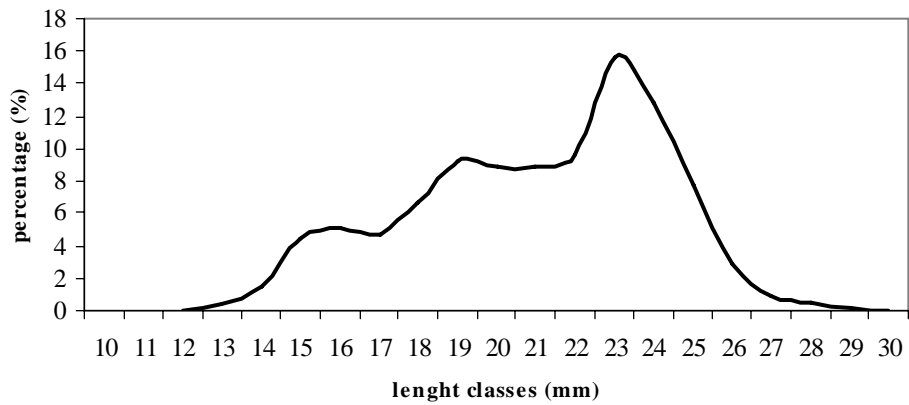


Fig. 2. Size distribution (carapace lengths) of shrimp as percentage from catches sampled in NAFO Div. 3M in 2004.